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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,085	07/03/2003	Christian Macanda	21482-00062-US1	5846

30678 7590 09/10/2004

CONNOLLY BOVE LODGE & HUTZ LLP  
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1990 M STREET NW  
WASHINGTON, DC 20036-3425

EXAMINER
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
DEMAKIS, JAMES A

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/612,085	<b>Applicant(s)</b> MACANDA, CHRISTIAN	
	<b>Examiner</b> James A Demakis	<b>Art Unit</b> 2836	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/03/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/715,183.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/28/2003</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____.<br>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)<br>6) <input type="checkbox"/> Other: _____. |
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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner respectfully rejects the Applicant's thesis that the surge current rating of the parallel combination of Spark Gaps is significantly higher than any individual device, as contrary to standard theory. It is unfounded, as stated in Sheet 4, lines 22-33; and Sheet 5, lines 1-7; and this thesis can not be supported based upon the lack of any test results presented in the Application, see Sheet 5, line 5; and Sheet 5, lines 23-26. The Applicant's observations more clearly suggest that the tolerances affecting the surge current rating are large and, as a result, surge current ratings above and below those desired would occur.

Additionally, the assertions that simultaneous conduction for at least two spark gaps; appear contradictory because after slowing the arc transition time by eliminating the Hydrogen gas in the spark gap; a fast response time to an over-voltage is created by geometric specification.

Therefore the Specification is non enabling for a lightning arrester device protecting an electrical circuit against transient over-voltages using a plurality of gas-

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type spark gaps connected in parallel wherein each individual spark gap has a surge current rating less than a desired surge current rating of the overall device.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Gumley et al (PCT WO 98/45919).

Regarding Claim 1:

Gumley et al teaches over voltage protection circuits for protecting against transients with various configurations including Gas spark gaps or arresters (45) connected in parallel, Figure 4.

With respect to the surge current rating of the individual devices being lower than “a desired surge current rating”, the Examiner has assumed that that Applicant is referring to a new higher value representing the combination of the Gas devices; see (1) above.

Regarding Claims 7-10:

Gumley et al teaches all that is claimed with respect to varistors (44), Figure 4; thermal switches or disconnectors (35), Figure 3, Sheet 11, lines 16-18, 1-4 and Sheet 10, lines 30-31; and visual signaling (36), Figure 3; Sheet 11, lines 16-31, and Sheet 12, line 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gumley et al (PCT WO 98/45919) in view of Napiorkowski et al (USPN 5,880,919), and Peterson et al (USPN 4,347,539).

Regarding Claim 11:

Gumley et al teaches all that is claimed, as discussed in the above rejection of claims 1, 7-10, except for the varistors having 1 mA clipping voltages and tolerances of +/-1%. Napiorkowski et al discloses the use of MOVs(52), Figure 1, with 1 mA clamping voltages, Col. 1, lines 46-48; Col. 2, lines 53-58.

It would have been obvious to one having ordinary skill at the time of the invention to modify Gumley et al with Napiorkowski et al to include MOVs with clamping voltages of 1 mA as a design selection, which would be consistent with lower voltage networks.

Peterson et al shows the use of varistors with a variation in clamping or discharge voltages of +/- 1%, Figure 1; Col. 1, lines 61-62.

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It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Gumley et al with Peterson et al to use varistors with clamping voltage tolerances of +/-1% which could provide more balanced protection.

4. Claims 2 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gumley et al in view of Lange (USPN 5,569,972).

Regarding claims 2 - 6:

Gumley et al teaches all that is claimed, as discussed in the above rejection of claims 1, 7-10; except for the spark gap construction and metalization types of the electrodes.

Lange discloses a gas filled spark gap assembly using copper end electrodes (2,3) that are disc or bowl shaped, affixed to contact rings or dishes (9); including tubular ceramic insulators or tubes (4,5), see Figure 5; Col. 1, lines 45-49; Col. 3, lines 5-16.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Gumley et al to include a spark gap of this type as part of the circuit design selection and to select the metalization type for the electrodes as fusible (copper) or refractory (tungsten) depending on the design choice of the end-of-life, short or open circuit, respectively.

5. Claim 12,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gumley et al. and in view of Lange as applied to claims 2-6 above, and further in view of Kawiecki, 3588576.

Claim 12: Kawiecki discloses a spark gap with a graphite line 34 or layer upon the ceramic tube or inner surface 10.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Gumley et al. and Lange with the teachings of Kawiecki by adding a conductive layer or graphite line to lower the breakdown voltage and lower the response time for significantly improved protection from voltage surges.

Claim 14: The simultaneous tripping of at least two spark gaps by manipulating the inner configuration and the Hydrogen gas content is treated above in (1).

***Allowable Subject Matter***

6. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Demakis whose telephone number is 571.272.2050. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571.272.2800 ext. 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Demakis



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